

AMENDMENTS TO THE CLAIMS

1. (currently amended): A system for multi-lingual speech recognition, comprising:

- a speech modeling engine, receiving and transferring a mixed multi-lingual speech signal into a plurality of speech features;
- a multi-lingual baseform mapping engine, comparing a plurality of multi-lingual query commands to obtain a plurality of multi-lingual baseforms;
- a cross-lingual diphone model generation engine, coupled to the multi-lingual baseform mapping engine, selecting and combining the multi-lingual baseforms, further comprising:
 - fixing one side contexts of the multi-lingual baseforms and mapping another side contexts of the multi-lingual baseforms to obtain a mapping result;
 - obtaining the multi-lingual context-speech mapping data according to the mapping result; and
 - storing the multi-lingual context-speech mapping data in a multi-lingual model database;

fixing left contexts of the multi-lingual baseforms and mapping right contexts of the multi-lingual baseforms to obtain a mapping result;

fixing right context and mapping the left contexts of the multi-lingual baseforms to obtain the mapping result if the right contexts of the multi-lingual baseforms mapping fails;

and

obtaining the multi-lingual context-speech mapping data according to the mapping result;

- a speech search engine, coupled to the speech modeling engine, receiving the speech features, and locating and comparing a plurality of candidate data sets corresponding to the speech features according to the multi-lingual model database to find match probability of a plurality of candidate speech models of the candidate data sets; and
- a decision reaction engine, coupled to the speech search engine, selecting a plurality of resulting speech models corresponding to the speech features according to the match probability from the candidate speech models to generates generate a speech command.

2-5. (cancelled)

6. (previously presented): The system as claimed in claim 1, wherein the multi-lingual model database comprises a plurality of multi-lingual anti-models.

7. (original) : The system as claimed in claim 6, further comprising:

at least one uni-lingual anti-model generation engine, receiving a plurality of multi-lingual query commands to generate a plurality of uni-lingual anti-models corresponding to specific languages; and

an anti-model combination engine, coupled to the uni-lingual anti-model generation engine, calculating the uni-lingual anti-models to generate the multi-lingual anti-models.

8. (cancelled)

9. (currently amended): A method for multi-lingual speech recognition, comprising the steps of:

performing the following steps by a digital signal processing system;

transferring a mixed multi-lingual speech signal into a plurality of speech features;

comparing a plurality of multi-lingual query commands to obtain a plurality of multi-lingual baseforms;

selecting and combining the multi-lingual baseforms, comprising:

fixing one side contexts of the multi-lingual baseforms and mapping another side contexts of the multi-lingual baseforms to obtain a mapping result; and

obtaining the multi-lingual context-speech mapping data according to the mapping result;

storing the multi-lingual context-speech mapping data in a multi-lingual model database;

fixing left contexts of the multi-lingual baseforms and mapping right contexts of the multi-lingual baseforms to obtain a mapping result;

fixing right context and mapping the left contexts of the multi-lingual baseforms to obtain the mapping result if the right contexts of the multi-lingual baseforms mapping fails; and

obtaining the multi-lingual context-speech mapping data according to the mapping result
locating and comparing a plurality of candidate data sets corresponding to the speech features according to the multi-lingual model database to find match probability of a plurality of candidate speech models of the candidate data sets; and

selecting a plurality of resulting speech models corresponding to the speech features from the candidate speech models according to the match probability to generate a speech command.

10-15. (cancelled)

15. (previously presented): The method as claimed in claim 9, wherein the multi-lingual model database comprises a plurality of multi-lingual anti-models.

16. (original): The method as claimed in claim 15, further comprising the steps of:
receiving a plurality of multi-lingual query commands corresponding to specific languages and generate a plurality of uni-lingual anti-models; and
combining the uni-lingual anti-models to generate the multi-lingual anti-model.

17. (cancelled)

18. (cancelled)

19. (previously presented): The system as claimed in claim 1, wherein the speech search engine locates and compares the candidate data sets, further referring the connecting sequences of the speech features and a speech rule database.

20. (previously presented): The method as claimed in claim 9, wherein locating and comparison of the candidate data sets further refers the connecting sequences of the speech features and a speech rule database.